REMARKS

Claims 1, 13 and 17 are independent.

Claim 1 stands rejected under 35 U.S.C. § 102 as being anticipated by WO 99/33110 to Ding et al. ("Ding"), and claims 13 and 17 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ding in view of Rathore et al. '068. These rejections are respectfully traversed for the following reasons.

In order to expedite prosecution, Applicants' representative initiated a telephone interview with Examiner Everhart. Applicants and Applicants' representative would like to thank Examiner Everhart for her courtesy in conducting the interview and for her assistance in resolving issues. As a result of the interview, substantive portions of which are summarized below, it was agreed that the enclosed amendment would be entered and the pending rejections would be withdrawn.

Each of claims 1, 13 and 17 embody the step of forming a conductive film ***having non epitaxial crystal structure*** on a barrier film having a crystal structure. The Examiner maintained the pending rejection based on the allegation that "Ding also teaches a crystalline Ta layer with a non-epitaxial Cu layer formed on the Ta layer ... [such that the] copper would then be the non-epitaxial conductive film ... ." The Examiner asserted that the copper is non-epitaxially formed "because the copper is (111)(page 1, lines 4-7) while the Ta is (002) ..., so that the copper is non-epitaxial to the Ta" (*see* page 2 of the outstanding Office Action). Accordingly, it appears the Examiner had taken the position that the different crystal orientations of Ta (002) and copper (111) necessitated that copper is non-epitaxially grown on the Ta. However, crystal orientation of the upper layer is determined depending on the orientation characteristics between the layers so that the relative crystal orientations between two layers is not determinative of the formation method of the upper layer, let alone necessitate non-epitaxial formation of the upper layer.

In this regard, it is respectfully submitted that Ding is completely silent as to the copper being non-epitaxially formed. In fact, depositing layers having different crystal orientations, where the crystal orientation of the upper layer depends on the crystal orientation of the lower layer, the upper layer would be an epitaxially grown layer. In the instant case, therefore, the Cu seed layer of Ding would likely be an epitaxially formed layer. Attached hereto are three technical publications, with an English translation accompanying the Japanese publication, evidencing the aforementioned.

As anticipation under 35 U.S.C. § 102 requires that each and every element of the claim be disclosed, either expressly or inherently (noting that "inherency may not be established by probabilities or possibilities", *Scaltech Inc. v. Retec/Tetra*, 178 F.3d 1378 (Fed. Cir. 1999)), in a single prior art reference, *Akzo N.V. v. U.S. Int'l Trade Commission*, 808 F.2d 1471 (Fed. Cir. 1986), based on the forgoing, it is submitted that Ding does not anticipate claim 1, nor any claim dependent thereon. The Examiner is directed to MPEP § 2143.03 under the section entitled "All Claim Limitations Must Be Taught or Suggested", which sets forth the applicable standard:

> To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. (citing *In re Royka*, 180 USPQ 580 (CCPA 1974)).

In the instant case, the pending rejections do not "establish *prima facie* obviousness of [the] claimed inventions" as recited in claims 13 and 17 because the proposed combinations fail the "all the claim limitations" standard required under § 103.

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.,* 819F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claims 1, 13 and 17 are patentable for the reasons set forth above, it is respectfully submitted that all claims dependent thereon are also patentable. In

addition, it is respectfully submitted that the dependent claims are patentable based on their own merits by adding novel and non-obvious features to the combination.

New claims 24-35 are submitted to be patentable because it is believed that none of the cited prior art discloses or suggests the claimed combinations recited thereby.

Based on the foregoing, it is submitted that all pending claims are patentable over the cited prior art. Accordingly, it is respectfully requested that the rejections under 35 U.S.C. § 102 and 103 be withdrawn.

CONCLUSION

Having fully and completely responded to the Office Action, Applicants submit that all of the claims are now in condition for allowance, an indication of which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below. To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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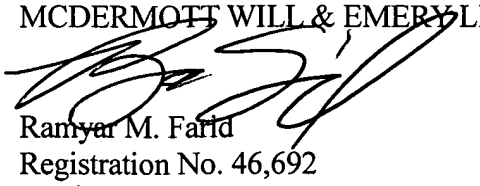

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